

PS9: 15**Aflatoxins in Pakistani chilies - empirical data for improving quality****Robert Russell Paterson, Nelson Lima**

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Background: Chilies are a major crop susceptible to aflatoxins (AF) contamination from fungi. AF are the most carcinogenic natural compound known and are implicated in causing liver cancers in thousands of humans. AF in Pakistani chilies is a serious constraint to exports and the health of the population of general significance to developing countries. Objectives: To establish empirical data for reducing AF in chilies. To introduce an "in house" analytical laboratory in Pakistan of use to developing countries and avoiding expensive extraction equipment, especially immuno-affinity columns. Methods: Samples were collected in Pakistan and analysed by chromatography using standardized methods, including a Pakistani-operated HPLC with fluorescence detection. In Pakistan, economical MycoSep columns were employed for separating AF. Results: All samples of Pakistani chilies contained AFB1 and high levels were obtained from ground samples in analysis carried out in the UK. There was no relation between AF and *Aspergillus flavus* quantification. Subsequently, the analysis was undertaken in Pakistan and 73.0% and 86.4% of different samples of whole and ground chilies, respectively were contaminated. A comparison was made of total AF in chilies collected in different seasons and winter chilies may provide a better quality product. AF in chilies from rural, semi-rural and urban areas of the Punjab region of Pakistan was determined. The data indicate that rural localities have particular problems. Finally, AF were analysed in chili varieties Longi, Wonder Hot and Skyline. The variety with lowest AF was Wonder Hot. The ability to undertake this analysis in Pakistan will enhance greatly the ability to improve chili production in that country. Lowest concentrations were from (a) urban and winter chilies and (b) the Wonder Hot variety. Hence, Wonder Hot chilies grown in winter and in urban locations are likely to have low AF relevant to improving exports and the health of the country.